



Office of the Delaware State Fire Marshal



1953-2023

ANNUAL REPORT
FISCAL YEAR 2023



STATE OF DELAWARE
OFFICE OF THE STATE FIRE MARSHAL

GROVER P. INGLE
STATE FIRE MARSHAL

DOVER OFFICE
HEADQUARTERS

September 1, 2023

*The Honorable John C. Carney, Governor
State of Delaware
Office of the Governor
Tatnall Building
Dover, DE 19901*

Dear Governor Carney,

I am pleased to forward to you the Seventieth Annual Report from the Office of the State Fire Marshal.

The Seventieth Annual Report reflects the accomplishments of the agency by our dedicated staff in providing a fire safe environment for the residents and visitors of Delaware during FY 2023. By conducting thorough and efficient fire investigations, performing occupancy inspections, various code enforcement activities, plan reviews, fire protection system reviews and inspections along with juvenile intervention and community outreach programs our agency was able to provide the citizens of the State of Delaware and all who visit a fire safe environment be it in the home, workplace or wherever they pursue their varied lifestyles or interest.

The staff of the Office of the State Fire Marshal worked with other state agencies, our partners in law enforcement, our first responders, the Delaware Volunteer Firefighter's Association, Delaware State Fire School, and Delaware State Fire Prevention Commission to deliver timely and quality service to the residents and visitors of Delaware.

We appreciate the support you provide to our agency as Governor as well as the support of the General Assembly in providing the funding and the resources needed to accomplish our mission.

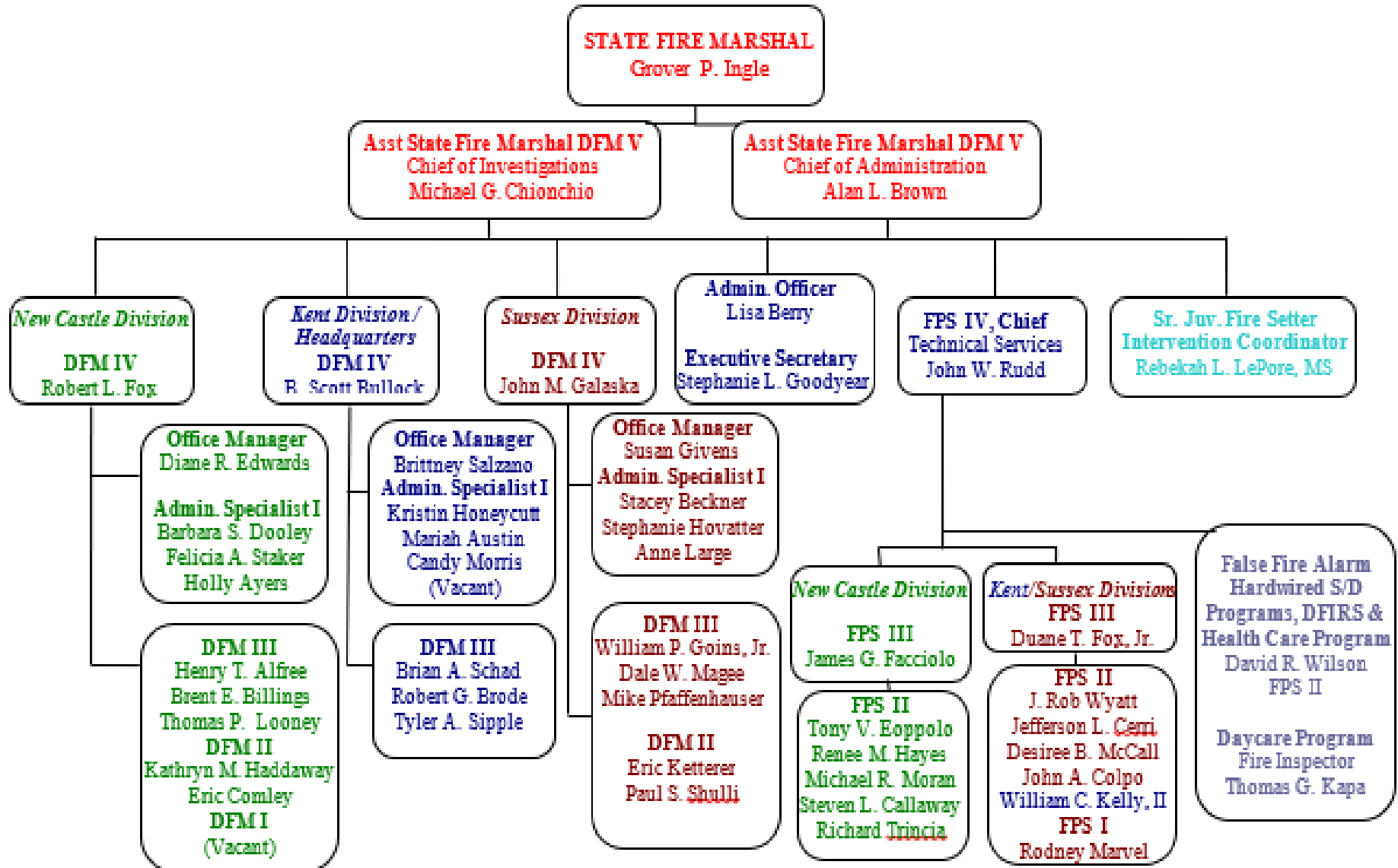
Respectfully submitted,

Grover P. Ingle, CFPS, CFI-II
State Fire Marshal

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OFFICE OF THE STATE FIRE MARSHAL ORGANIZATIONAL CHART



OFFICE OF THE STATE FIRE MARSHAL

In 1953, at the urging of the Volunteer Fire Service, the State Legislature created the Office of the State Fire Marshal and directed regulations reflecting nationally recognized standards, be promulgated to enhance life safety and property conservation for the citizens of Delaware.

The Office of the State Fire Marshal functions as an independent state agency under the State Fire Prevention Commission, which promulgates the State Fire Prevention Regulations, as enforced by the Office of the State Fire Marshal. As the law enforcement agency charged by 16 Del. C. §6612 with the suppression and investigation of arson, the Office of the State Fire Marshal provides the lead role in fire and arson investigations, statewide. The agency is charged with assisting the Chief of any fire department on request, inspections and code enforcement in health care facilities, educational occupancies, places of assembly, public accommodations, flammable and combustible liquids, flammable gases, explosives, and fireworks.

The Office of the State Fire Marshal is funded by revenues from the General Fund Appropriations of the State and by revenues generated by the agency from plan reviews of new construction and licensing fees associated with fire protection systems.

The Office of the State Fire Marshal is responsible for the comprehensive compliance with the State Statute for the installation of smoke detection devices in all residential occupancies, which greatly reduce the likelihood of injuries and deaths from fire.

The State Fire Marshal is appointed by the State Fire Prevention Commission and serves a four-year term. Under the direction of the State Fire Marshal, the daily operations of the agency are carried out by a team of dedicated staff members operating out of the headquarters division in Dover, with regional offices in New Castle and Georgetown.

The Office of the State Fire Marshal is to provide a fire safe environment for the citizens of Delaware and all who visit and carries out its mandate for Public Service, through the work of three divisions: Administration, Field Operations & Technical Services.

ADMINISTRATION DIVISION

The Administration of the Office of the State Fire Marshal is carried out at the headquarters division located in Dover and has the responsibility to ensure the accountability, accuracy, and competency of all facets of the agency through the following:

- Program Planning & Evaluation
- Administrative Policies & Procedures
- Maintain Central Records
- Fiscal Management & Budget Preparation
- Personnel Management
- Physical Plant Requirements
- Delaware Fire Incident Reporting System
- Staff Training & Education
- On-going Review of State Fire Prevention Regulations
- Data Management
- Fire Loss/Fire Death Statistics
- Interaction with a variety of State Agencies, General Assembly, Federal, County & Local Government

FIELD OPERATIONS DIVISION

Fire Investigations by Deputy Fire Marshals:

- Conduct fire investigations to determine the origin and cause of the fire.
- Identify incendiary fires & other fires of criminal nature.
- Investigate arson & other fires of criminal nature.
- Pursue & apprehend those responsible for other fires of criminal nature & arson.
- Investigate fatal fire incidents.
- Assist the Department of Justice by providing expert testimony on arson fires and other fires of criminal or accidental nature.
- Identify accidental fire causes to establish proactive preventative measures.

Public Service, Life Safety, and Code Enforcement by Deputy Fire Marshals:

- Ensure compliance with the State Statute mandating the installation of smoke detectors in all residential occupancies.
- Investigate complaints relative to violations of the State Fire Prevention Regulations.
- Conduct on-site Life Safety, Fire Prevention and Code Enforcement Inspections in the following occupancies:

Educational Occupancies * Places of Assembly* Public Accommodations* Mercantile* Business* Flammable & Combustible Liquids * Flammable Gases * Fireworks * Explosives * Government Buildings

TECHNICAL SERVICES DIVISION

Fire Protection Specialists:

- Review all plans & specifications for construction of new buildings, additions, alterations, or modifications to existing buildings to ensure compliance with the State Fire Prevention Regulations.
- Provide consultation to prospective developers & builders regarding their plans for projects in the concept phase.
- Ensure required fire alarm and fire suppression systems are installed properly.
- Coordinate all requests for alternative code requirements and all appeals to the State Fire Prevention Regulations.
- Oversee the Licensing & Certification of Fire Alarm Signaling & Fire Suppression System contractors.
- Investigate complaints relative to deficiencies in the installation of fire protection systems.
- Provide technical support to other state & local jurisdictions.

SPECIAL PROGRAMS

*Juvenile Intervention * K9 Accelerant Detection * Health Care Facility & Day Care Facility Certification * Major Incident Response Team * Assistance to Fire Chiefs * Delaware Fire Incident Reporting System * Quality Assurance * Hard Wired Smoke Detector * False Fire Alarm * Reduced Ignition Propensity Cigarette **

NEW HIRES

Holly Ayers

Administrative Specialist I

Holly Ayers began her employment with our office on October 10, 2022, as an Administrative Specialist I, assigned to the New Castle County Division.

Candy Morris

Administrative Specialist I

Candy Morris began her employment with our office on January 3, 2023, as an Administrative Specialist I, assigned to the Kent County Division.

Anne Large

Administrative Specialist I

Anne Large began her employment with our office on January 20, 2023, as an Administrative Specialist I, assigned to the Sussex County Division.

Rodney Marvel

Fire Protection Specialist I

Rodney Marvel began his employment with our office on May 22, 2023, as a Fire Protection Specialist I, assigned to the Sussex County Office.

PROMOTIONS

Richard Trincia

Fire Protection Specialist II

Richard Trincia began his employment with our office on November 8, 2021, as a Fire Protection Specialist I. On November 8, 2022, Richard was promoted to Fire Protection Specialist II, assigned to the New Castle County Division.

Eric Comley

Deputy Fire Marshal II

Eric Comley began his employment with our office on February 28, 2022, as a Deputy Fire Marshal I. On March 17, 2023, Eric was promoted to Deputy Fire Marshal II, assigned to the New Castle County Division.

Lisa Berry

Administrative Officer

Lisa Berry began her employment with our office on January 16, 2022, as an Office Manager. On April 24, 2023, Lisa was promoted to Administrative Officer, assigned to the Kent County Division.

Brittney Salzano

Office Manager

Brittney Salzano began her employment with our office on March 14, 2022, as an Administrative Specialist I. On June 18, 2023, Brittney Salzano was promoted to Office Manager, assigned to the Kent County Division.

RETIREES

Dennett Pridgeon

Fire Protection Specialist II

Dennett Pridgeon began his employment with our office on October 3, 1994, as a Fire Protection Specialist I, assigned to the Sussex County Division. He retired on October 31, 2022.

Susan Givens

Office Manager

Susan Givens began her employment with our office on November 1, 1978, as a Clerical, assigned to the Sussex County Division. She retired on May 31, 2023.

Alan Brown

Assistant State Fire Marshal

Alan Brown began his employment with our office on January 16, 1996, as a Deputy Fire Marshal I, assigned to the New Castle County Division. He retired on June 30, 2023.



FY-2023 FINANCIAL REPORT

July 1, 2022, thru June 30, 2023



GENERAL FUNDS

<i>General Fund Appropriations</i>	<i>Available Funds</i>	<i>Encumbrances</i>	<i>Current Yr Expenditures</i>
Personnel (Salaries)	* \$2,468,539.79	\$0.00	\$2,402,662.03
Contractual	\$308,200.00	\$5,070.27	\$303,129.73
Energy	\$55,600.00	\$4,700.00	\$48,453.76
Supplies	\$23,400.00	\$4,107.14	18,681.17
General Fund Totals	\$2,855,739.79	\$13,877.41	\$2,772,926.69

* Avail Funds=DGL060 Amt \$2,471,000.00 - \$2,460.21 Neg Amt at year end covered by OMB

APPROPRIATED SPECIAL FUNDS (REVENUE HOLDING ACCOUNTS)

<i>Appropriations</i>	<i>Revenue Received FY23</i>
Amusement-8601 (70002)	\$1,705.00
Assembly Licensing-8607 (70003)	\$24,075.00
Inspections-8605 (70004)	\$289,170.00
Day Care-86 I4 (70007)	\$51,818.00
Explosives-8602 (700I 0)	\$475.00
Fireworks-8603 (70014)	\$3,050.00
In-House License-8616 (70015)	\$725.00
Licensing-8610 (70017)	\$14,650.00
Occup/Permits/License-8606 (70019)	\$2,650.00
Systems License-8609 (70026)	\$20,200.00
Misc. Revenue (70028)	\$55,257.29
Plan Review-8604 (70108)	\$4,210,269.75
ASF Sub Total	\$4,674,045.04
<i>FY 22 Holding Accounts Carry Over</i>	<i>\$14,027,681.70</i>
ASF Grand Total	\$18,701,726.74

<i>ASF Appropriations</i>	<i>Available Funds</i>	<i>Encumbrances</i>	<i>Current Yr Expenditures</i>
Personnel (Salaries)	\$1,745,200.00	\$0.00	\$1,875,109.50
Travel	\$34,000.00	\$0.00	\$2,340.92
Contractual	\$226,800.00	\$28,000.00	\$163,261.40
Supplies	\$81,000.00	\$0.00	\$16,324.71
Capital	\$196,200.00	\$1,269.70	\$69,549.59
Revenue Refund	\$1,500.00	\$0.00	\$0.00
ASF Spending Totals	\$2,284,700.00	\$29,269.70	\$2,126,586.12
ASF Spending Grand Total		\$2,155,855.82	
<i>FY23 Holding Account Carry Over</i>		<i>\$16,545,870.92</i>	

* Transferred \$140,000 from ASF Contractual Appropriation to cover Personnel/Salaries deficit

RESTRICTED NON-APPROPRIATED SPECIAL FUNDS

<i>Appropriations</i>	<i>Available Funds</i>	<i>Revenue Rec'd</i>	<i>Encumb.</i>	<i>Remaining Funds</i>
Cigarette Certification (21002)	\$210,505.30	\$76,250.00	\$0.00	\$286,755.30
Detector Fund (20345)	\$4,046.85	\$0.00	\$0.00	\$4,046.85
Hearing Impaired Detectors (20511)	\$0.00	\$0.00	\$0.00	\$0.00
Juvenile Intervention Program (20566)	\$0.00	\$0.00	\$0.00	\$0.00
NSF Totals	\$214,552.15	\$76,250.00	\$0.00	\$290,802.15

Total Cash on Hand - June 30, 2023

\$16,836,673.07

TECHNICAL SERVICES PLAN REVIEW



Technical Services Division staff reviews plans for compliance with the Delaware State Fire Prevention Regulations for various project types statewide.

SITE PLANS: Technical Services staff review site plans to ensure access for fire, emergency medical, and law enforcement personnel; they review any required fire lanes, fire hydrant locations, fire department connection locations, and in cases where no water for fire protection is available, building setbacks from property lines. Some of the site plan types reviewed include:

- Residential subdivisions, including one- and two- family dwellings, duplexes, and townhomes.
- Multi-Residential sites, including apartment buildings, hotels, dormitories, lodging and rooming houses, and residential board and care facilities.
- Educational sites, including public and private schools and any athletic facilities.
- Health Care occupancies, including hospitals, nursing homes, and ambulatory health care facilities.
- Detention and Correctional sites.
- Commercial sites for business and retail use.
- Assembly sites, including Places of Worship, restaurants, and banquet facilities.
- Storage and Industrial sites, including mini-storage, warehouse, and distribution facilities, manufacturing facilities, poultry processing plants, and research and development laboratories.
- Bulk storage tank locations for flammable/combustible liquids and other hazardous materials.
- Sites proposing photovoltaic (solar) ground arrays and other “green” energy types of equipment.



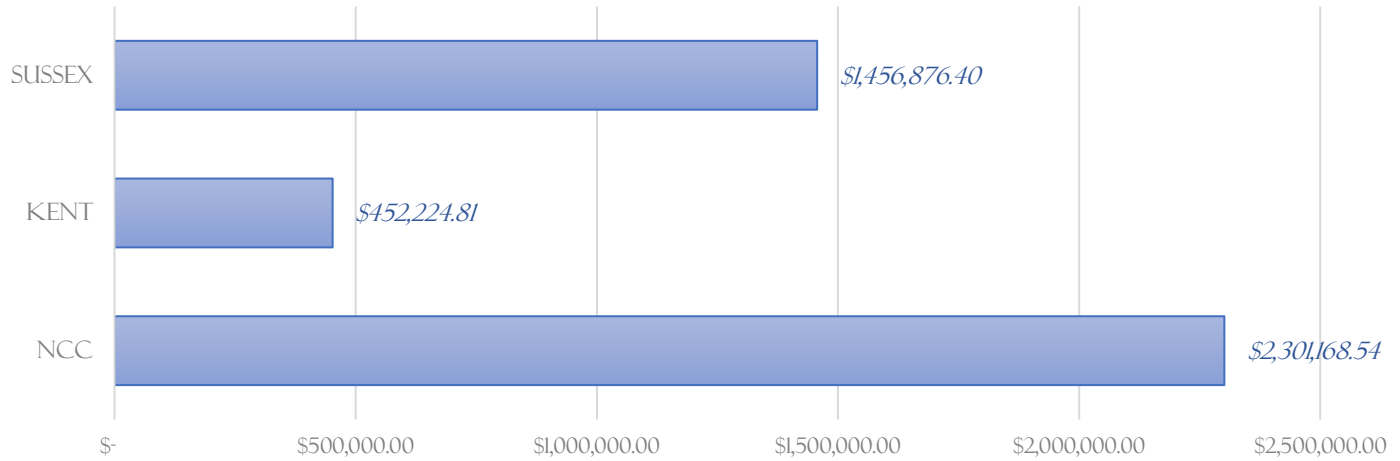
CONSTRUCTION: Technical Services staff review construction plans for all new buildings, additions, renovations, and tenant fit-outs, including small businesses and “Mom and Pop” type stores to multi-story state of the art research facilities. Also included are unique reviews for infrastructure improvements, including water main renewal and extension projects, cellular towers, and 800Mhz radio towers.

FIRE PROTECTION SYSTEMS: Technical Services staff review plan submissions for fire sprinkler systems, fire alarm systems, hood and hood fire suppression systems, standpipe systems, clean agent systems, fixed fire suppression systems, and fire pump installations.

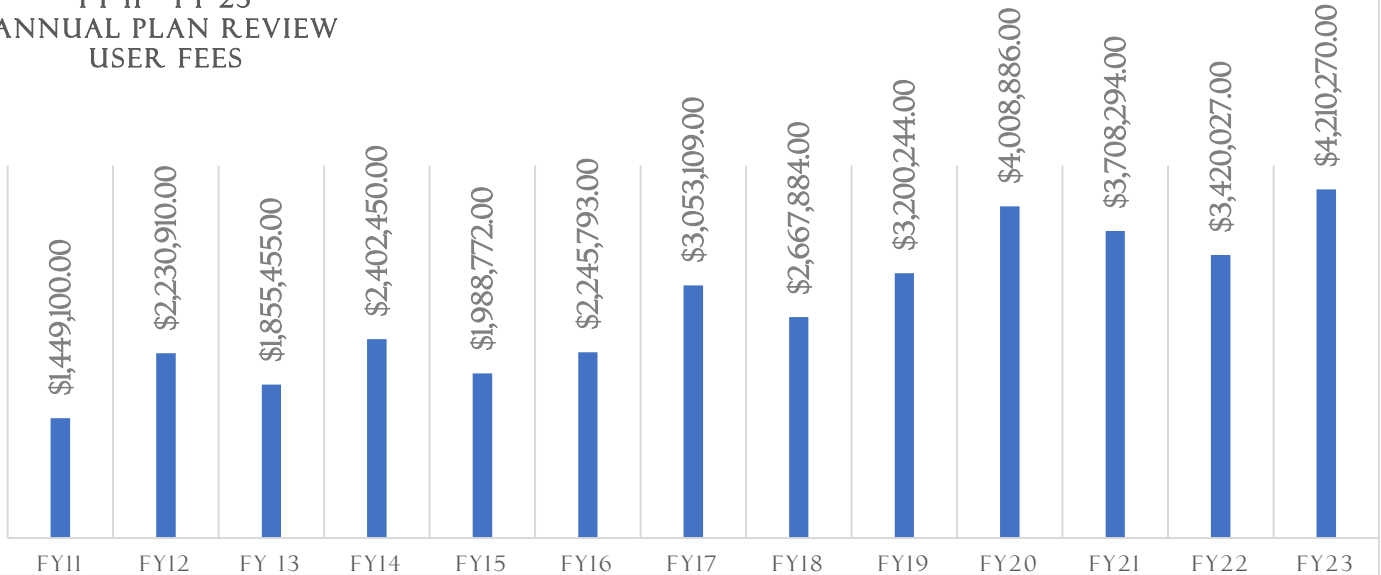
TANK REVIEWS: Technical Services staff review plans for all above ground, underground, and mounded tanks for the storage of flammable and combustible liquids and any dispensing systems for these tanks. Propane tank installations, including retail propane tank exchange locations, are reviewed. Tanks storing bulk hazardous materials such as hydrogen are also reviewed.

PLAN REVIEW USER FEE REVENUE

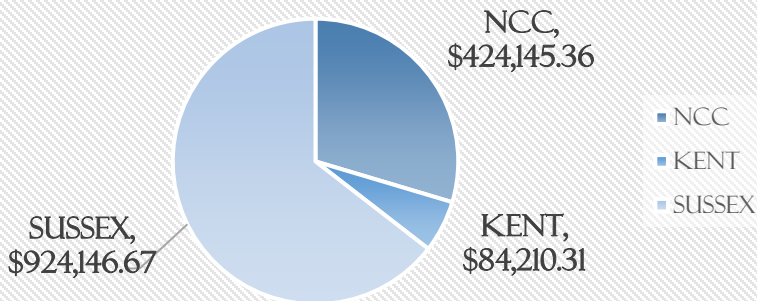
\$4,210,269.75 Total



FY 11 - FY 23 ANNUAL PLAN REVIEW USER FEES



EXEMPT PLAN REVIEW USER FEE REVENUE*



**Exempt projects include all State, all Public and Public Charter Schools, County, Municipality, Delaware River & Bay Authority, Delaware State Housing Authority, and Volunteer Fire and EMS Projects.*



TECHNICAL SERVICES

Inspections

Technical Services Division staff conduct inspections to verify compliance with the Delaware State Fire Prevention Regulations for various project types and occupancies statewide. Examples of some of these inspections include:

SITE INSPECTIONS: Technical Services staff inspect sites to ensure that all required access for fire, emergency medical services, and law enforcement personnel complies with the site plan reviewed and approved by staff. All fire lanes, fire department connections, and fire hydrants are inspected to verify that they are installed and properly marked in compliance with the Delaware Fire Prevention Regulations.

CONSTRUCTION INSPECTIONS: Technical Services staff inspect new buildings, additions, renovations, tenant fit-outs, and occupancy changes to ensure that what is approved on the plan submitted is what was constructed. Depending on the size of the project, several inspections may be performed, including rough-in or close-in inspections, which are done while the building's "skeleton" is still exposed, and final inspections, which verify that the project complies with the Delaware State Fire Prevention Regulations and permits the owner to pursue a Certificate of Occupancy from the local building code official once Technical Services staff leave their approval sticker on-site.

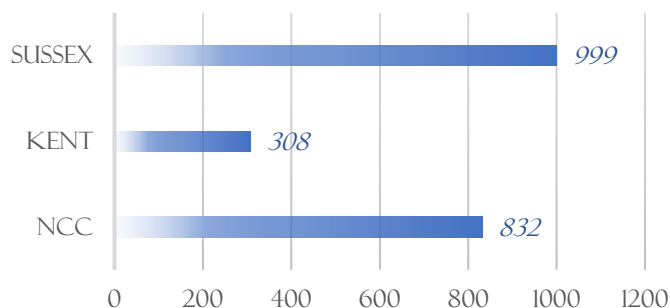
FIRE PROTECTION SYSTEM INSPECTIONS: Technical Services staff conduct final acceptance testing in accordance with nationally recognized codes and standards that are adopted by the Delaware State Fire Prevention Regulations for all fire sprinkler systems, fire alarm systems, hood and hood fire suppression systems, standpipe systems, clean agent systems, fixed fire suppression systems, and fire pump installations that have been submitted and approved for installation. Depending on the size and complexity of the system, several of these tests may be required. Construction projects will not receive a final inspection approval sticker unless all fire protection systems pass their acceptance testing.

TANK REVIEWS INSPECTIONS: Technical Services staff inspect above ground, underground, and mounded tanks installed for the storage of flammable and combustible liquids and any dispensing devices for these tanks. Tanks storing bulk hazardous materials such as propane and hydrogen are also inspected. Tanks are not permitted to be placed in service until they pass their inspection.

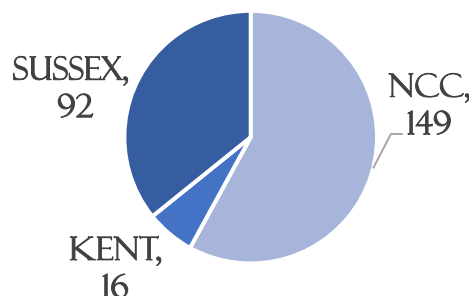
DAY CARE INSPECTIONS: Our Day Care Inspector performs annual inspections on all Group Day Care Homes, Day Care Centers, and other facilities utilized for the supervision of children. These inspections are conducted to determine compliance with the Delaware State Fire Prevention Regulations, and once approved, the Day Care Inspector provides the approval paperwork to the Office of Child Care Licensing (DSCYF) to meet DSCYF's obligation to approve "providers" to operate Day Cares in accordance with the guidelines of DSCYF's DELACARE requirements.

HEALTH CARE INSPECTIONS: Our Health Care Inspector performs annual inspections and surveys for health care occupancies (including hospitals, nursing homes, and limited care facilities) to verify compliance with the Delaware State Fire Prevention Regulations. The Health Care Inspector coordinates with the Department of Health and Social Services in support of their mission to improve the quality of life for Delaware's citizens by protecting vulnerable populations from fire and life safety hazards. These inspections are also a requirement for any health care facility to receive funds from the federal Center for Medicare and Medicaid Services (CMS). Additionally, ambulatory surgery centers are inspected for compliance with the Delaware State Fire Prevention Regulations for the facility to receive an annual license from the Department of Health and Social Services' Office of Health Care Facilities Licensing and Certifications.

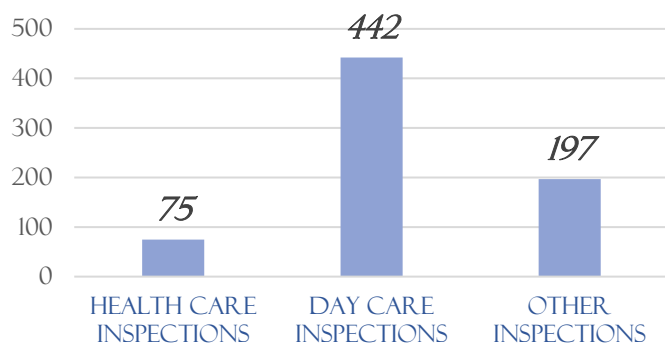
FINAL INSPECTIONS *2,139 TOTAL*



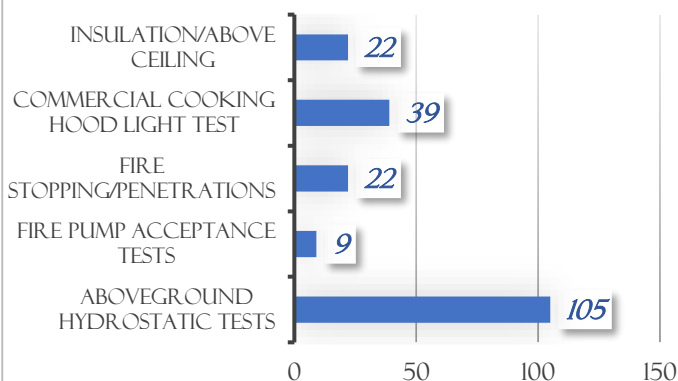
PROGRESS INSPECTIONS *257 TOTAL*



INSPECTIONS *Health Care, Day Care, & Other*



OTHER INSPECTIONS DEFINED *197 Total*





ADDITIONAL TASKS

Because of their special technical knowledge and expertise, supervisory staff in the Technical Services Division provided advisory assistance to several organizations.

<i>DNREC's Tank Management Section</i>	Represent the Agency on their Advisory Committee.
<i>Office of Child Care Licensing (DSCYF)</i>	Provides technical consultation and advice as needed.
<i>City of Wilmington Fire Marshal's Office</i>	Assist with plan reviews; continued availability in an advisory role as needed.
<i>City of Newark Fire Marshal's Office</i>	Assist with plan reviews and inspections; continued availability in an advisory role as needed.
<i>Office of Healthcare Licensing and Certification</i>	Provides technical consultation and advice as needed.
<i>National Fire Protection Association</i>	Agency provides 2 Alternate Members to various NFPA Technical Committees. Attended Fire Marshal Forum in Quincy, MA
<i>County & Municipal Technical Advisory Committees</i>	Participates in the advisory process in New Castle, Kent, and Sussex Counties, and several Cities and Towns as requested.
<i>Lower Delaware & Maryland Building Code Officials Association</i>	Represents the Agency; attends regularly scheduled meetings to discuss code enforcement issues in Kent County and Sussex County.
<i>Delaware Building Officials Association</i>	Represents the Agency; attends regularly scheduled meetings to discuss local code enforcement issues in New Castle County.
<i>Delaware Residential Fire Sprinkler Coalition</i>	Staff members attend and participate in scheduled meetings. Participates in a "live-burn" demonstrations as needed.
<i>University of Delaware Department of Environmental Health and Safety</i>	Assist in the fire safety training of the University's Resident Assistants.
<i>Preliminary Land Use Service (PLUS) Office of State Planning Coordination</i>	The Office of the State Fire Marshal continues its support of the PLUS program administered through the Office of State Planning Coordination (OSPC). In FY-23, a representative of the State Fire Marshal has attended and participated in the monthly meetings remotely along with developers of proposed projects and representative of other State agencies.
<i>National Association of State Fire Marshals (NASFM)</i>	Attended spring meeting with the United States Fire Administration at the National Emergency Training Center, Emmitsburg, MD
<i>American Fire Alarm Association (AFAA)</i>	Attend regional meetings and provide input as an Authority Having Jurisdiction (AHJ)
<i>American Society of Certified Engineering Technicians (ASCET)</i>	Attend regional meetings and provide input as an Authority Having Jurisdiction (AHJ)

FISCAL YEAR 2023

PROJECTS EXCEEDING TWO MILLION DOLLARS

NEW CASTLE COUNTY

Governors Square Shopping Center Property - Bear
Pike Creek Shopping Center
Center Pointe Plaza - Phase 1
1000 Uniqema Boulevard
Barley Mill Plaza
Hologic / Siemens
Northside Shopping Center
Duck Creek Business Campus
STA Industrial (WUXI) / Pharma - Middletown
James T. Vaughn Correctional Center (JTVCC)
3420 Kirkwood Highway
Tri State Mall
First State Crossing FKA Citisteel Inc
Richardson Park Elementary
William B. Keene Elementary School
Glasgow Commons Property
Bank of America at Christiana
Deerfield Center
Delcastle Technical High School
Nemours Children's Hospital- Main Campus
Encompass Health Rehab Center of Middletown
618 Lambson Lane
Great New Beginnings of St. Andrews
Wells Fargo Tower
Tally-Ho Plaza
Louis Redding Middle School
Middletown Auto Park
State of Delaware - Right of Way - Water Main Ext
St Andrews Center
DP&L Energy and Technology - 500 N Wakefield
JP Morgan Stanton-Christiana
Emory Hill - 2 Reads Way
Delaware Technical Community College - Newark
Levels Business Park Parcel E-2
Avenue North - 1800 Concord Pike

KENT COUNTY

Smyrna High School - 500 Duck Creek Pkwy
Sunset Village- Camden
Food Bank of Del- Milford
Newton Properties
City of Milford Police Department (NEW)
Railroad Square Apartments

SUSSEX COUNTY

Jerry Ann McLamb Medical Pavilion
Grotto Pizza Property - 1603 Coastal Highway
Western Sussex Business Campus - Herring Run
Cypress Hall Residential Subdivision
The Residences at Rehoboth Bay Property - Lewes
PAM Sussex Bayhealth
All Climate Storage of Millsboro
Tupelo Sands
Belhaven Hotel
Fisher's Popcorn Zion Church Road
Village of College Park Apartments (PH A1)
Sussex Central High School Campus
Cape Henlopen State Park
Lewes Yacht Club Property - 2701 Cedar Street
Delaware Tech Community College - Georgetown
Millsboro Police Station
Inn at Bayside
Grottos Corporate Headquarters
Delaware Coastal Airport Property - Rudder Lane
Sussex County Family Court
Shady Road Commercial
Rehoboth Beach Patrol Building (Baltimore Ave)
PODS of Bridgeville



FIRE PROTECTION COMPANY LICENSING & QUALITY ASSURANCE PROGRAM



The Delaware State Fire Prevention Regulations requires that all companies that design, install, and maintain fire protection systems be licensed annually by the Office of the State Fire Marshal.

In Fiscal Year 2022, there were 227 Licenses issued to companies providing services to owners of Fire Alarm Signaling systems and/or Fire Suppression Systems. Employed by those companies are Certificate Holders which the Office of the State Fire Marshal recognizes as the licensed company's party of responsible charge. Additionally, there are 155 persons employed by the licensed Fire Suppression companies that possess the Certificate necessary to conduct the inspection and testing of water-based fire protection systems.

The Office of the State Fire Marshal's dedicated Administrative Staff handles the processing of all licensing paperwork, fees, Certificates of Inspection, and Major Deficiency Reports in addition to fielding inquiries from licensed contractors and those wishing to obtain a license to design, install, and maintain fire protection systems.

Major Deficiency Reports are sent to the Divisional Office in the County in which the deficiency originated for investigation by Technical Services Division Staff or Deputy Fire Marshals to verify a fire protection system does indeed have a deficiency and corrective action is explained to the owner or the owner's representative.

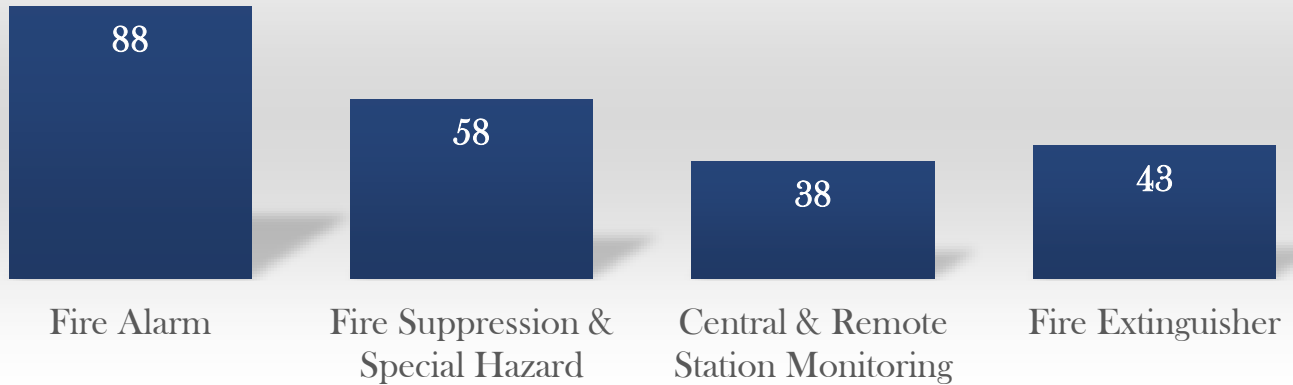
If the corrective action can be performed while staff is on site, this will be noted in the file and the deficiency will be cleared. If corrective action cannot be performed while staff is on site, then a Notice of Violation (NOV) is written with the deficiency noted and what corrective action must be taken to address the deficiency. If the deficiency is to such a degree that it will take time and funding to address, then a Plan of Corrective Action is provided to the Office of the State Fire Marshal for review and approval.

There are currently over 16,600 fire protection systems in service across the State of Delaware, including fire alarm signaling systems, fire suppression systems, standpipe systems, fire pumps, special hazard systems, and commercial cooking hood suppression systems.

The Licensing Program is currently under revision to simplify the licensing categories and to allow for electronic submission and payment of fees by licensed vendors.

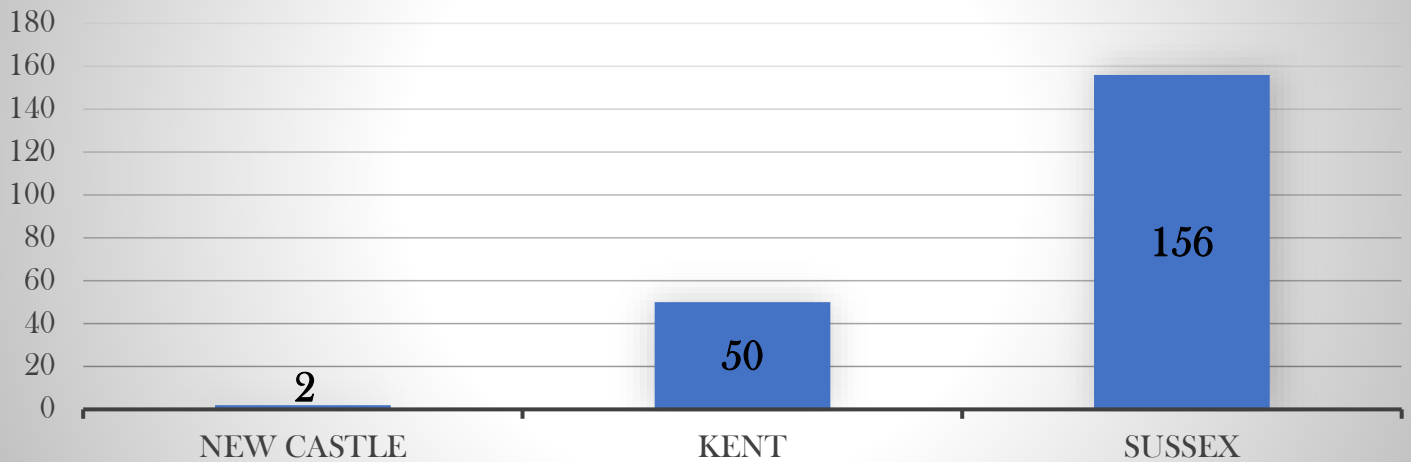
Licenses Issued By Type

227 Total



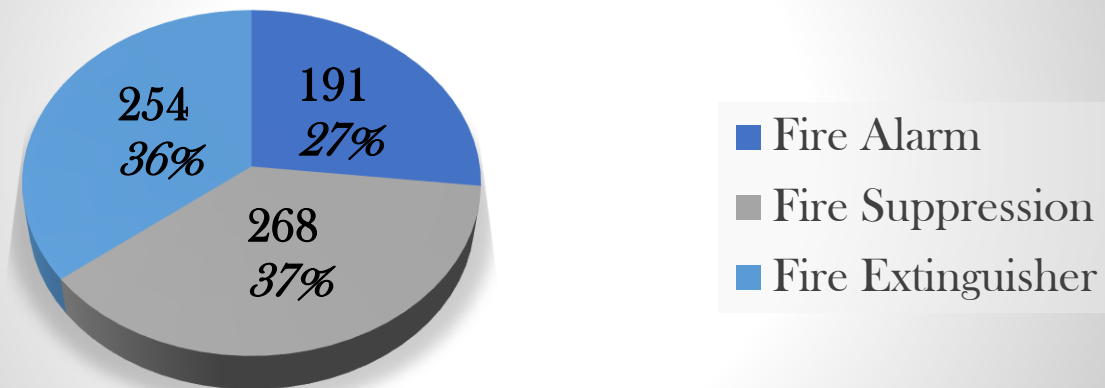
Fire Protection System Notice of Violations Issued

208 Total



Certificate Holders By Type

713 Total





RESIDENTIAL FIRE SPRINKLER SYSTEMS

- According to the National Fire Protection Association (NFPA), in 2020 home fires caused 2,230 civilian fire deaths, 8,600 injuries, and \$6.8 billion dollars in direct property damage.
- Today's home fires burn faster due to the prevalence of plastics and synthetics in modern furnishings, open floor plans, and homes on fire experience structural failure and even collapse in a matter of minutes due to the use of lightweight pre-engineered wood construction.
- The NFPA reports in 2021 that the civilian fire death rate was 89% lower in structures with fire sprinkler systems, and the rate of firefighter injuries was 60% lower in fires with fire sprinkler systems installed than in fires without fire sprinkler systems.
- The Office of the State Fire Marshal encourages all developers and builders to install residential fire sprinkler systems (NFPA 13D systems) in all one- and two-family dwellings and townhomes, and our agency will continue to work with local planning and building code officials to assist them with the implementation of these effective life safety systems.

For the timeline of July 1, 2022, to June 30, 2023, the following NFPA 13D-compliant residential fire sprinkler systems were reviewed and inspected by Technical Services Division Staff:

NEW CASTLE: 15 SYSTEMS REVIEWED / 32 SYSTEMS INSPECTED

KENT: 1 SYSTEM REVIEWED / 0 SYSTEMS INSPECTED

SUSSEX: 23 SYSTEMS REVIEWED / 64 SYSTEMS INSPECTED

The average cost to install a NFPA 13D-Compliant Residential Fire Sprinkler System in the State of Delaware:

\$2.60 PER SQUARE FOOT

For NFPA 13D-compliant fire sprinkler systems, each system is designed for activation of two sprinkler heads, with each head flowing 13 gallons a minute for 10 minutes, for a total flow of 26 gallons per minute.

Typical fire hose handlines used by the fire department each will flow between 150-325 gallons a minute, usually with two handlines in service at the same time for an extended period.

If the fire forces the fire department to withdraw and switch to exterior master streams, each of those typically flows between 500-1,250 gallons per minute for an extended period.

LITHIUM-ION BATTERIES & ENERGY STORAGE SYSTEMS



One of the challenges facing emergency services in Delaware and across the United States is the prevalence of Lithium-Ion batteries. These batteries can be found in small devices and electronics, such as smart phones, laptop computers, e-cigarettes, vacuum cleaners, and other devices commonly found in the residential setting.

Lithium-Ion batteries are also found in the transportation setting, and include e-bikes and e-scooters, which are also known as micro-mobility devices, and electric vehicles (EV).

An Energy Storage System (ESS) is equipment capable of storing energy to provide electrical power as required. Because Lithium-Ion batteries are so good at storing this energy, they are often used by these ESS. Examples of their use include windmill and photovoltaic (solar) systems, which may be intermittent; the ESS thus provides a reliable source of energy when there is no wind or if it is a cloudy day. ESS can also be found in commercial electric vehicle (EV) charging stations throughout Delaware and the United States.

One of the main issues of concern with Lithium-Ion batteries is that they have the potential to go into thermal runaway, meaning that a very fast and uncontrolled release of energy (heat) occurs in a battery cell. This thermal runaway may result in fire or explosion, which can then ignite other batteries and combustibles in the area. Once in thermal runaway, they also can release hazardous and flammable gases.

Because of an increasing number of injuries and deaths from fires involving Lithium-Ion batteries, the United States Consumer Product Safety Commission (CPSC) recently held a forum on July 27, 2023, to address the issues and safety of these batteries. Several panel discussions, including representatives from the Fire Department of New York (FDNY), the National Fire Protection Association (NFPA), UL Research Institutes, and the University of Maryland were held to address the issues associated with these batteries and propose recommendations.

The Office of the State Fire Marshal Technical Services Division staff have been attending training seminars on these types of batteries and energy storage systems to stay abreast of this technology. Training includes review of the 2020 edition of NFPA 855, *Installation of Stationary Energy Storage Systems*, and the 2021 edition of NFPA 1, *Fire Code*.

As this technology is evolving and becoming more prevalent in the State of Delaware, the Office of the State Fire Marshal staff will be making future recommendations to the State Fire Prevention Commission based on the outcome of the CPSC forum and similar regulatory groups to address these in future editions of the Delaware State Fire Prevention Regulations.



ACCELERANT DETECTION CANINE UNIT



The Office of the State Fire Marshal Accelerant Detection K9 Team has served the state since 1990. The K9 Unit examines fire scenes throughout the state for the presence of accelerants or ignitable liquids, such as gasoline or lighter fluid that may be used to start or spread a fire. In 1997 the agency received a grant from State Farm Insurance Company for an Accelerant Detection K9. This same grant was received and utilized for the current K9. The grant provides the K9 and initial training, lodging and expenses for certification.

The Accelerant Detection K9 Unit has been staffed since May 2022 by K9 PJ, a Yellow Labrador Retriever and handler Deputy Fire Marshal III Michael Pfaffenhauser. The Team of K9 PJ and handler Deputy Pfaffenhauser are required to recertify each year. The team successfully completed their first recertification, July 2023. This recertification marks PJ's first successful year of dedicated service to the citizens of the State of Delaware. The K9 Team is a food reward team K9 which refers to how the K9 is trained. The K9 is required to make a positive alert coming to a final response on an accelerant to be rewarded with a handful of food. To keep up with food intake the K9 and trainer follow a very intensive daily training processes delivered at different times and for random durations involving actual fire scenes, training scenarios and training aids. This process is repeated until the K9 receives its daily allotment of food which varies from day to day and is regulated by the handler. The K9 is a "companion dog" who lives and travels with its Deputy Fire Marshal handler. A strong team bond is formed between handler and K9 through the intensive training regimen, however, PJ is a faithful friend and companion to all at the State Fire Marshal's Office.

This past year K9 PJ and Deputy Pfaffenhauser trained well over *1000* separate times. This training represents thousands of trips for K9 PJ to Pfaffenhauser's hand for food after a positive final response alert. K9 PJ responded to *59 fire scenes* this fiscal year and was utilized in his operational capacity *26 times*. These operational K9 examinations included major loss fire scenes, personal injury fire scenes as well as fatal fire scenes.

Successful demonstrations were performed for Boy Scouts of America, Delaware State Police Academy, New Castle County Police Academy, Department of Motor Vehicles, and numerous school classes. The K9 Team can provide regional assistance to other agencies when needed and this fiscal year assistance was given to the Wilmington Fire Department as well as the City of Dover's Fire Marshal's Office.

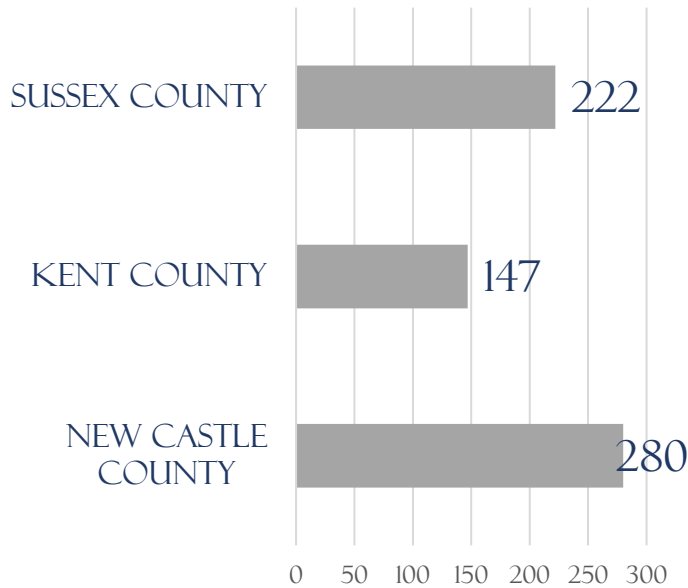
*DFM MICHAEL PFAFFENHAUSER
& K9 PJ*



INVESTIGATIONS

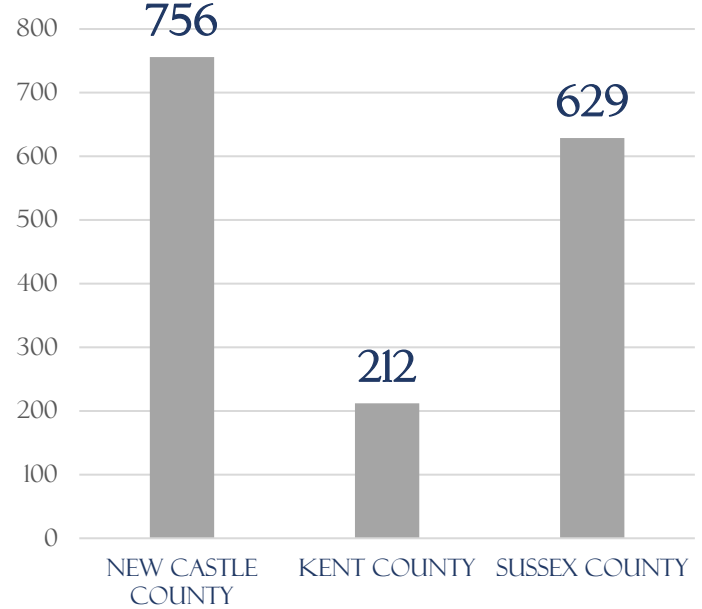
INVESTIGATIONS

649 Total



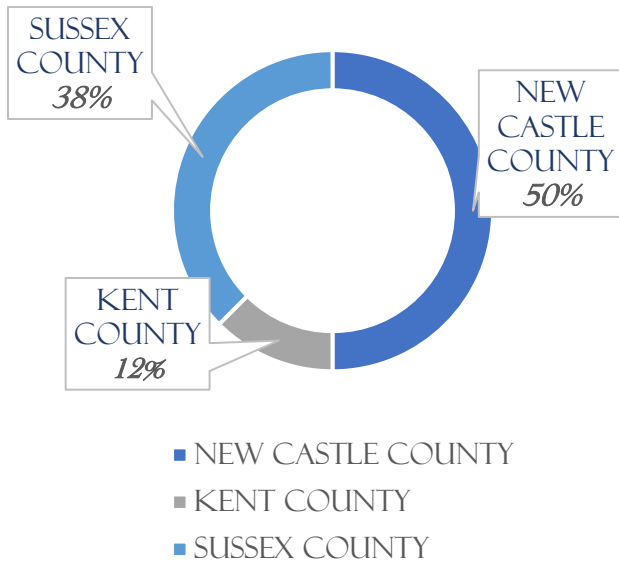
INSPECTIONS

1,597 Total



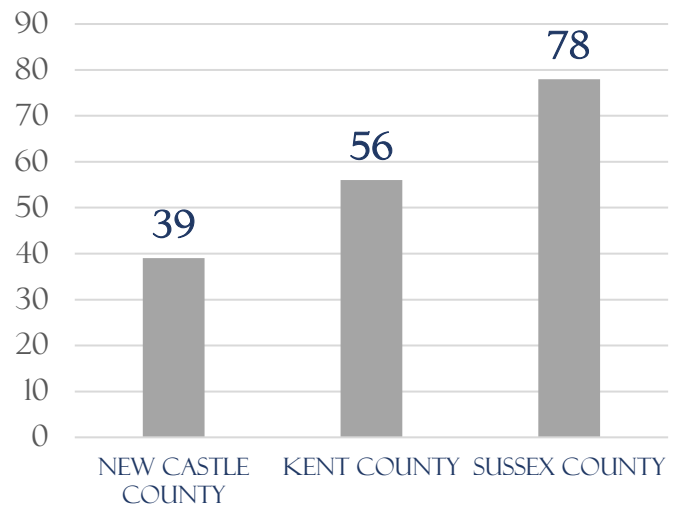
FIRE DEATHS

8 Total



FIRE CODE COMPLAINTS

173 TOTAL



MAJOR INCIDENT RESPONSE TEAM



Date of Fire: Saturday, October 1, 2022
 Time of Alarm: 1609 Hours
 Victim: W/M 84 years old
 Location: *16 E. Saratoga Road - Milford*
 Fire Department: Carlisle Fire Company
 Type of Incident: House Fire
 Origin: Kitchen
 Cause: Ignition of Clothing
 Cause of Death: Thermal Burns
 Smoke Detectors: Yes
 Fire Suppression: No

Date of Fire: Sunday, November 27, 2022
 Time of Alarm: 0155 Hours
 Victim: W/M 49 years old
 Location: *300 Mary Street - Wilmington*
 Fire Department: Five Points Fire Company
 Type of Incident: Building Fire
 Origin: 1st floor Apartment - Living Rm
 Cause: Under Investigation
 Cause of Death: Thermal Burns
 Smoke Detectors: No
 Fire Suppression: No

Date of Fire: Saturday, April 01, 2023
 Time of Alarm: 2306 Hours
 Victim: W/M 62 years old
 Location: *570 Gum Bush Rd - Townsend*
 Fire Department: Townsend Fire Company
 Type of Incident: Residential House Fire
 Origin: Kitchen
 Cause: Cooking
 Cause of Death: Smoke Inhalation
 Smoke Detectors: Yes - Alerted Occupants
 Fire Suppression: No

Date of Fire: Saturday, June 10, 2023
 Time of Alarm: 1327 Hours
 Victim: W/F 84 years old
 Location: *13 Angola Road - New Castle*
 Fire Department: Good Will Fire Company
 Type of Incident: Residential House Fire
 Origin: 1st floor Bedroom
 Cause: Pending
 Cause of Death: Pending
 Smoke Detectors: No - Battery Missing
 Fire Suppression: No

Date of Fire: Saturday, November 26, 2022
 Time of Alarm: 1452 Hours
 Victim: W/M 66 years old
 Location: *855 Brittney Lane - Hartly*
 Fire Department: Hartly Volunteer Fire Company
 Type of Incident: House Fire
 Origin: Living Room/Victim
 Cause: Discarded Smoking Material
 Cause of Death: Smoke Inhalation
 Smoke Detectors: No
 Fire Suppression: No

Date of Fire: Monday, January 16, 2023
 Time of Alarm: 1332 Hours
 Victim: W/F 44 years old
 Location: *616 Hammond Drive - Milford*
 Fire Department: Carlisle Fire Company
 Type of Incident: Residential House Fire
 Origin: Bedroom
 Cause: Incendiary - Open Flame
 Cause of Death: Smoke Inhalation
 Smoke Detectors: No
 Fire Suppression: No

Date of Fire: Sunday, May 14, 2023
 Time of Alarm: 1123 Hours
 Victim: W/M 61 years old
 Location: *17329 Phillips Hill Rd - Laurel*
 Fire Department: Laurel Fire Company
 Type of Incident: Residential House Trailer Fire
 Origin: Pending
 Cause: Pending
 Cause of Death: Thermal Burns/Smoke Inhalation
 Smoke Detectors: No
 Fire Suppression: No

Date of Fire: Wednesday, June 28, 2023
 Time of Alarm: 2328 Hours
 Victim: W/M 61 years old
 Location: *107 Downs Drive - Wilmington*
 Fire Department: Cranston Heights Fire Company
 Type of Incident: Residential House Fire
 Origin: 2nd floor Bedroom
 Cause: Pending
 Cause of Death: Smoke Inhalation/Thermal Burns
 Smoke Detectors: Yes
 Fire Suppression: No



2023 ARSON INVESTIGATION UNIT

In March 2023, the Delaware Office of the State Fire Marshal placed in-service a 2022 Ford / LDV, Inc. conversion Investigations Unit replacing the older “*Arson One*”. This investigation unit has been outfitted with up-to-date equipment and technology to assist fire investigators at the scene of a fire or explosion. The unit serves all of Delaware and is capable of self-preservation for several days on the scene of an incident. The vehicle is utilized on all fatal fires and those large-scale incidents that require specialized tools and equipment to process the scene.



JUVENILE FIRESETTER INTERVENTION PROGRAM



REBEKAH L. LEPORE, MS

Senior Juvenile Firesetter
Intervention Coordinator

The Juvenile Fire Setter Intervention Program (JFIP) was initiated in 1981. In those **41 years, 6,143** juveniles have been interviewed and a **3% recidivism rate** has been consistently maintained. The program was temporarily suspended due to COVID-19, from March 2020 -June 2021. Since that time, referrals have been slowly coming in, with just **14** referrals in FY22. Juveniles are referred to the program through a variety of agencies including, Child Mental Health, Division of Family Services, Youth Rehabilitative Services, Schools, and Fire Departments. A majority of those referrals originated from either parents/guardians or through State or local Fire Marshal's Offices.

The JFIP represents the Office of the State Fire Marshal (OSFM) with public relations at community events. This year, the program participated in **8** events throughout the State of Delaware.

Juveniles between the ages of 3-17, may be referred to the JFIP by calling our toll free number at **1-800-432-8500** or by utilizing the referral form which can be accessed on our website <http://statefiremarshal.delaware.gov/juvenile.shtml>

EDUCATIONAL INTERVENTION

- Consequences of Fire Play
- Hurting Themselves and Others
- A High Price to Pay (Legal/Financial)
- Media Influence
- Media Portrayal of Fire vs. Reality
- Good Choices vs. Bad Choices
- Peer Pressure Influence





2023 International Fire Service Training Association's (IFSTA) Winter Meeting in Tulsa, Oklahoma January 12 & 13, 2023

In January 2023, our staff was chosen by the North American Fire Training Directors (NAFTD) to represent the US and Canada, in the field of Youth Firesetting, at IFSTA's Annual Winter Meeting, in Tulsa, Oklahoma.

Rebekah LePore was invited to help evaluate a new curriculum that will be used for the training of future Fire Service Personnel in this field. Rebekah was extremely proud and honored for the opportunity to represent Delaware's Juvenile Firesetter Intervention Program on this national level.



FALSE FIRE ALARMS

Effective January 1, 2004, an amendment to the Delaware Code (Title 16 §6637) introduced an initiative intended to reduce the frequency of false fire alarms in the State of Delaware. It is intended to deter excessive number of fire alarms that have been determined to be a result of poor detector maintenance or lack of required fire alarm servicing.

	<i>NEW CASTLE</i>	<i>KENT</i>	<i>SUSSEX</i>	<i>STATEWIDE</i>
TOTAL ALARM ACTIVATIONS (# OF WARNINGS ISSUED)	33	70	92	195

In FY23 there were over **195 False Fire Alarms** reported.

DELAWARE FIRE INCIDENT REPORTING SYSTEM

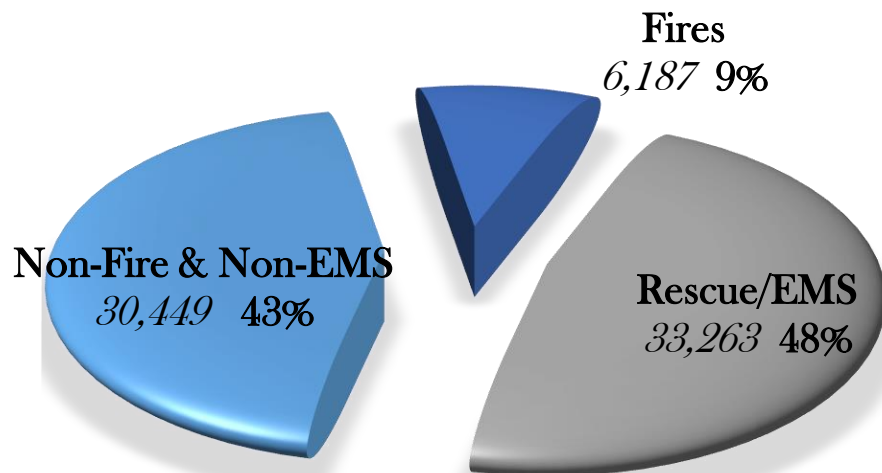
Keeping Delaware Safe - Fighting Fire with Facts - DFIRS

DFIRS is Delaware's segment of the Federal Emergency Management Agency's (FEMA) National Fire Incident Reporting System (NFIRS), a reporting system that captures the full range of incident activity. It constitutes the world's largest national collection of fire incident information. The Office of the State Fire Marshal oversees the consolidation and technical review of the collected data from all 61 Delaware fire departments.

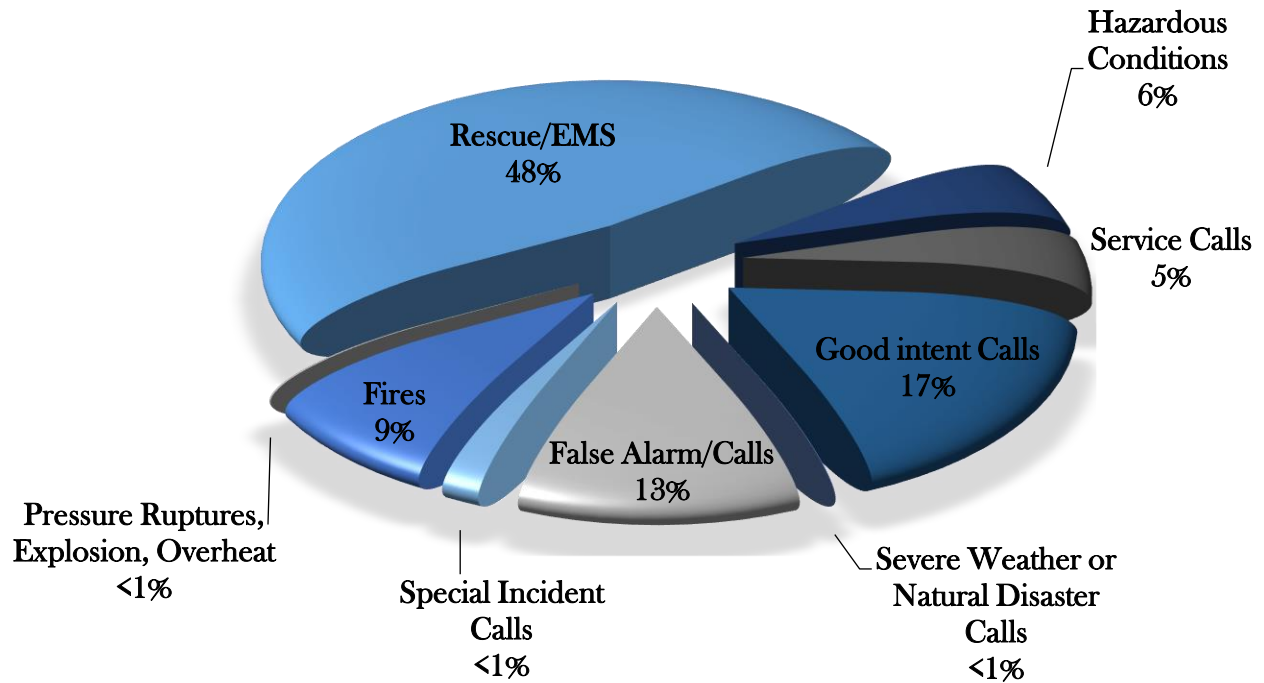
In 2022, **69,899** incidents were reported to the Office of the State Fire Marshal. There were **11,379** incidents in which a fire department provided assistance (mutual or automatic aid given) to another jurisdiction.

The makeup of the types of incidents that fire departments reported in 2022 showed an increase by **4 percent** from the previous year. The following charts provide an overview of the current characteristics in Delaware:

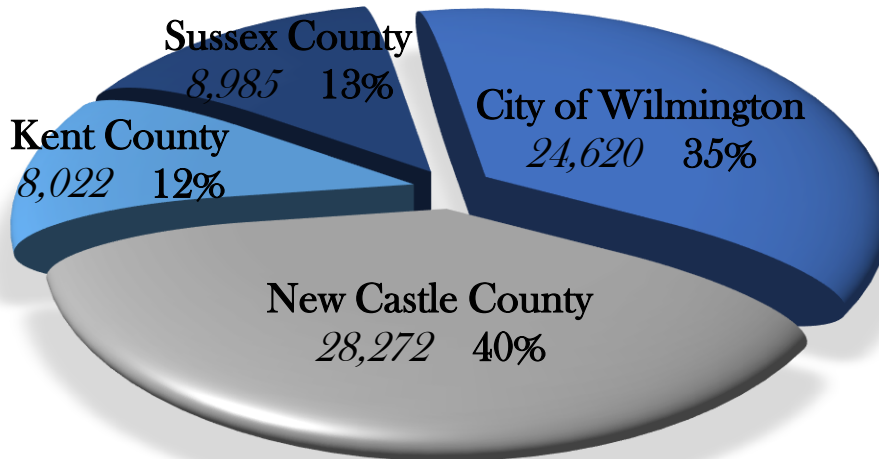
TOTAL INCIDENTS 2022



INCIDENT TYPE SUMMARY 2022

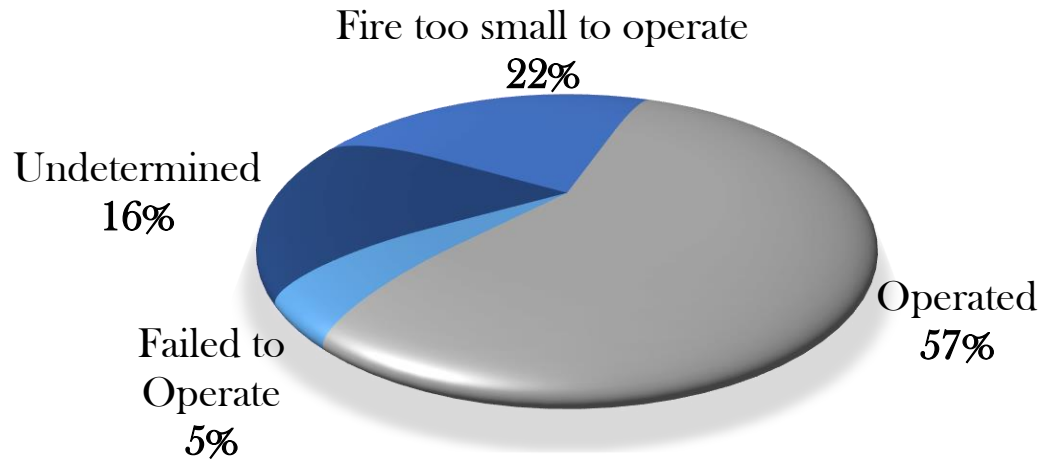


INCIDENTS BY COUNTY AND CITY OF WILMINGTON 2022

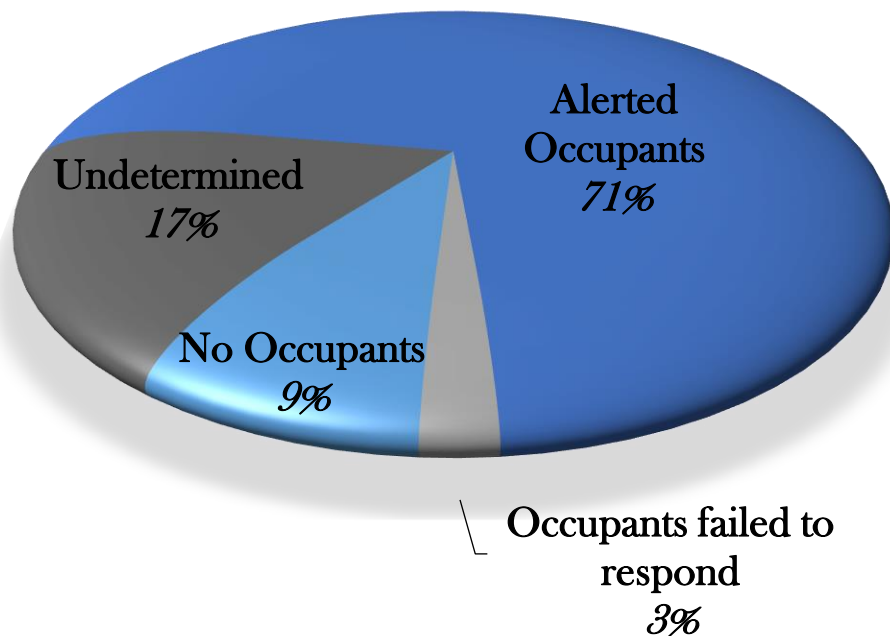


The data in these tables identify the operating principle of detectors present in the area of origin or in near proximity to the area of origin.

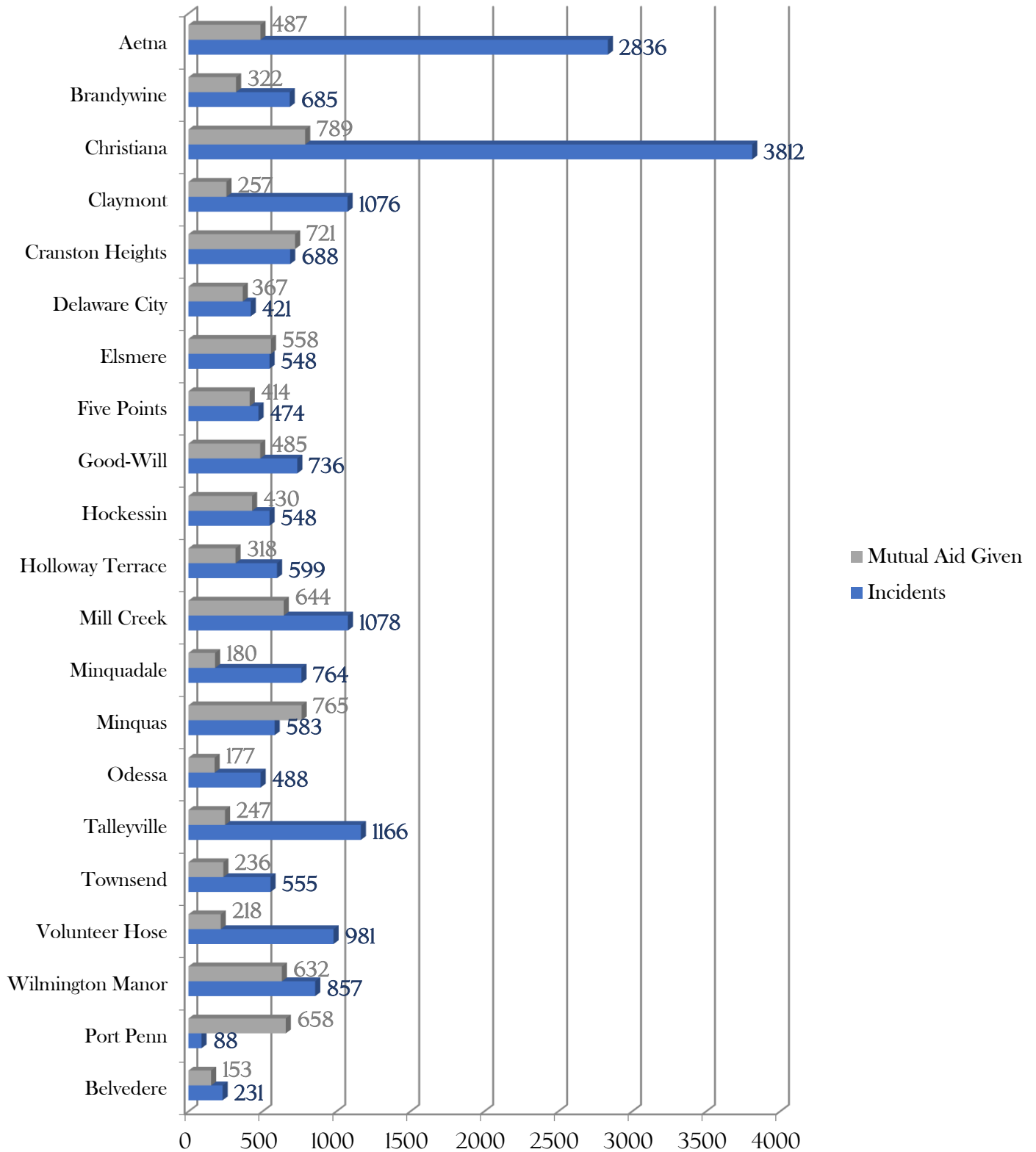
DETECTOR OPERATION 2022



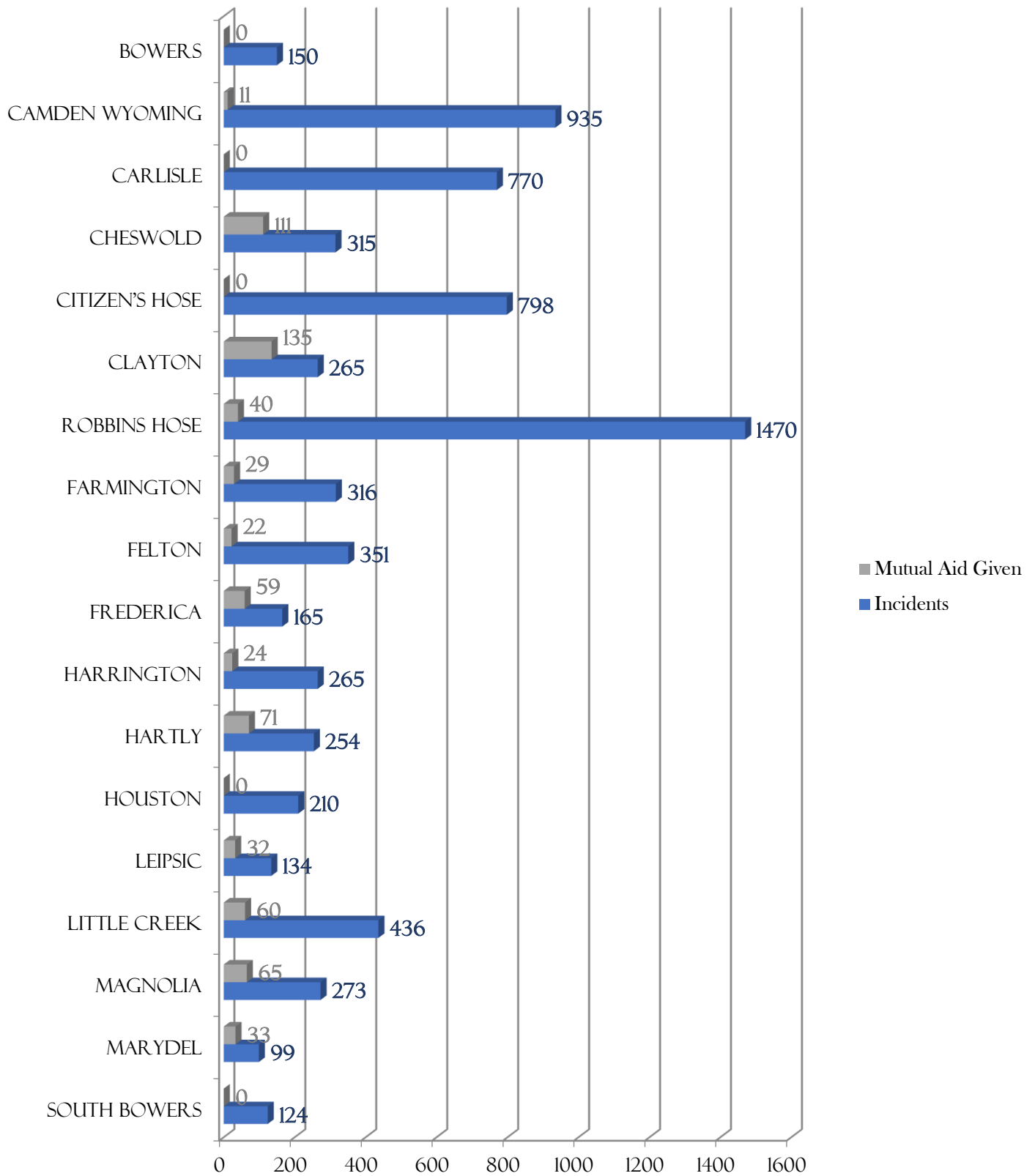
DETECTOR EFFECTIVENESS 2022



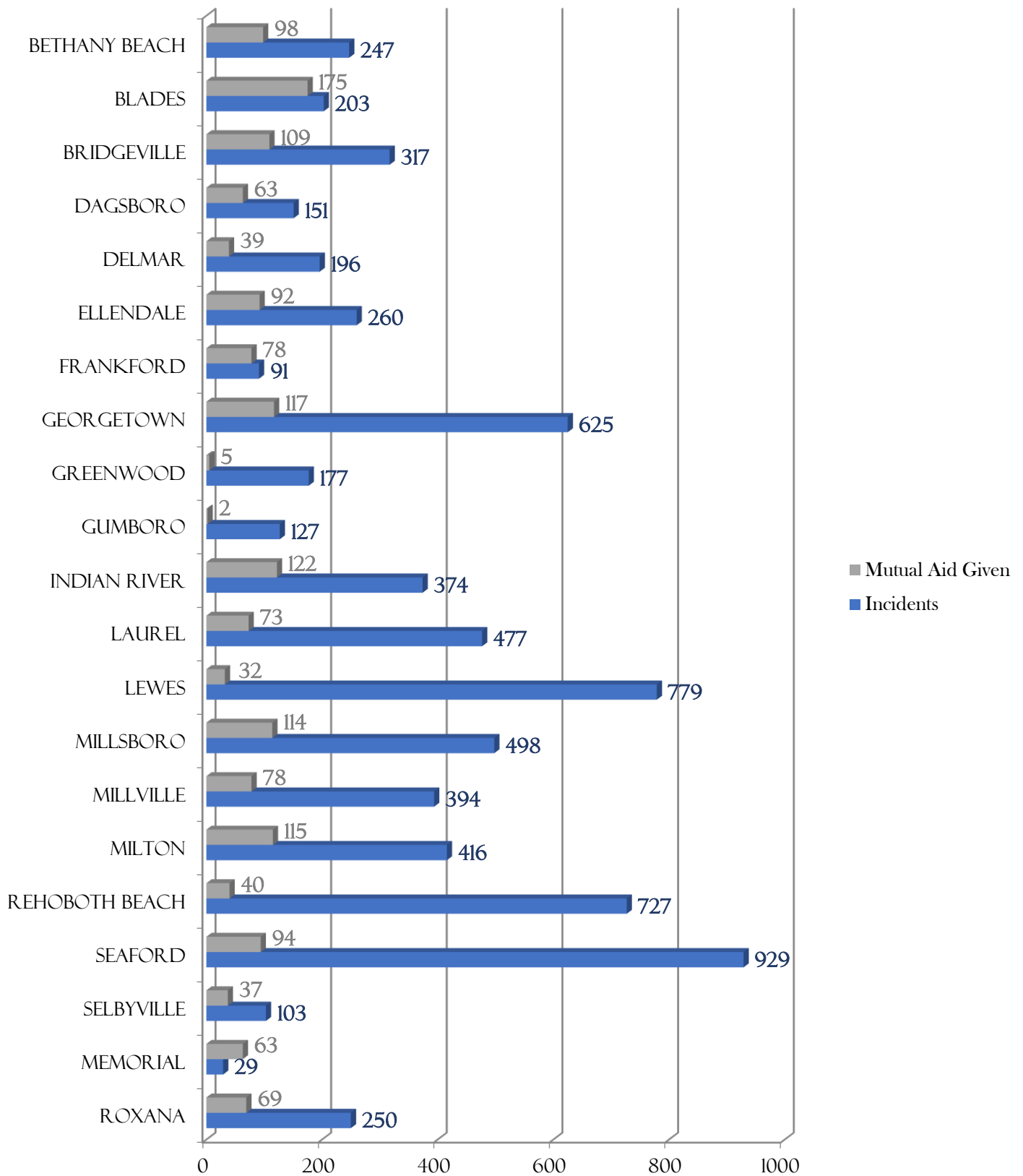
NEW CASTLE COUNTY INCIDENTS (EXCLUDING CITY OF WILMINGTON) 2022



KENT COUNTY INCIDENTS 2022



SUSSEX COUNTY INCIDENTS 2022



OFFICE OF THE DELAWARE STATE FIRE MARSHAL



HEADQUARTERS DIVISION

1537 CHESTNUT GROVE RD
DOVER, DE 19904

NEW CASTLE DIVISION

2307 MACARTHUR RD
NEW CASTLE, DE 19720



SUSSEX DIVISION

22705 PARK AVENUE
GEORGETOWN, DE 19947

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